

ABSTRACT OF THE DISCLOSURE

The present invention provides a dielectric film structure having a substrate and a dielectric film provided on the substrate and in which the dielectric film has (001) face orientation with respect to the substrate, and in which a value u in the following equation (1) regarding the dielectric film is a real number greater than 2:

$$u = (C_c/C_a) \times (W_a/W_c) \quad \dots (1)$$

where, C_c is a count number of a peak of a (001') face of the dielectric film in an Out-of-plane X ray diffraction measurement (here, l' is a natural number selected so that C_c becomes maximum); C_a is a count number of a peak of a (h' 00) face of the dielectric film in an In-plane X ray diffraction measurement (here, h' is a natural number selected so that C_c becomes maximum); W_c is a half-value width of a peak of the (001') face of the dielectric film in an Out-of-plane rocking curve X ray diffraction measurement; and W_a is a half-value width of a peak of the (h' 00) face of the dielectric film in an In-plane rocking curve X ray diffraction measurement.